

TRW

7132.44-02

3 January 1973

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CR-129938

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Attention: Mr. Edward W. Crump, Code 430

Subject: Monthly Progress Report for Period Ending 29 December 1972

Contract: ERTS Image Data Compression Technique Evaluation


Principal Investigator: Dr. Donald J. Spencer, GSFC ID PR512

On December 5, Dr. D. J. Spencer and Dr. C. L. May visited W. Alford and E. Crump at Goddard Space Flight Center. The current status of the contractual work and plans for future work was discussed. Some preliminary computer results were shown. As a result of a discussion with E. W. Crump, 26 January 1973 was fixed as the due date for the Data Analysis Plan.

At the meeting, W. Alford pointed out anomalies in the data resulting from mappings used while decompressing from the six-bit sensor data to the seven-bit MSS data. The effects of the mapping on the data compression algorithm will be investigated and a modified algorithm may result which utilizes the anomaly to obtain higher compression.

A listing of the MSS tape 102S-1S103 reveals another data anomaly. Every sixth scan line of band 5 has intensity values which are much lower than the values of the adjacent scan lines, indicating a defective sensor. This problem also affects the SSDI data compression algorithm since a high correlation between spectral bands is required. The effects of this anomaly should also be investigated in order to circumvent a deterioration of compression when defective data is encountered.

Included with this letter is a report prepared for NASA on preliminary computer simulation results. The results are representative of those to be obtained during the data analysis phase, subject to any changes resulting from the Data Analysis Plan. The Data Analysis Plan will be prepared during the first part of January and more tapes will be received and evaluated during this period.

  
Donald J. Spencer

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(E73-10012) ERTS IMAGE DATA COMPRESSION  
TECHNIQUE EVALUATION Monthly Progress  
Report, period ending 29 Dec. 1972 (TRW  
Systems Group) 1 p HC \$3.00 CSCI 05B  
N73-15348  
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